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Abstract

Title: The potentiality of vegan diet to reduce cholesterol-levels in people with type 2-diabetes  

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Background: Cardiovascular disease (CVD) is a widespread disease and generate high cost for the Swedish society every year. Many of the patients with CVD suffer from diabetes mellitus type 2. High levels of total- and LDL-cholesterol is one of the risk factors for CVD. High amount of saturated fat can cause high level of cholesterol. Vegan diet is usually a diet low in saturated fat and might be a diet that potentially can reduce the cholesterol-level.

Objective: To examine the scientific evidence whether a vegan diet can reduce total- and LDL-cholesterol (risk factor for CVD) in people with type 2 diabetes. This systematic review will investigate if vegan diet can improve the cholesterol level for persons with type 2 diabetes.

Search strategy: The databases PubMed and Scopus were used for literature search. The searchwords: vegan, plant-based, cholesterol, LDL, blood lipid and diabetes were used in three combinations in PubMed and two combinations in Scopus.

Selection criteria: Inclusion criteria were: adults with type 2 diabetes, vegan diet, RCT-studies, cohort-studies, studies based on humans and studies written in Swedish or English. Only measurements of total- and LDL-cholesterol were evaluated. Exclusion criteria applied were: vegetarian diets or diets with animal products. Studies shorter than two weeks were excluded.

Data collection and analysis: Four articles were selected based on the evaluation criteria. Only three were analysed, since two of the articles were based on the same study but with different follow–up time. The quality of the studies was critically examined through the SBU model "Mall för kvalitetsgranskning av randomiserade studier". Total- and LDL-cholesterol measurements were graded through "Evidensgradering hjälpmedel 2015", which is based on GRADE but is designed by the university of Gothenburg.

Main results: Two of the studies were graded as low quality and the other one was graded as middle-high to high quality. The total strength of evidence in the total- and LDL-cholesterol measurements was low respectively very low. The examed studies didn’t show any significant difference in the reduction of total- and LDL-cholesterol between the diet groups in each study, but the vegan diet showed a reduction in total cholesterol in all three of the studies and a reduction in LDL-cholesterol in one of the studies.

Conclusions: There is very low evidence (+) that vegan diet can not reduce LDL-cholesterol more than low-fat diets and/or ADA-diets in people with type 2 diabetes. There is low evidence (++) that vegan diet can not reduce total cholesterol more than low-fat diets, ADA-diets or diet based on animal protein in people with diabetes type 2 diabetes. The scientific foundation is incomplete to say anything about the effects of the vegan diet.